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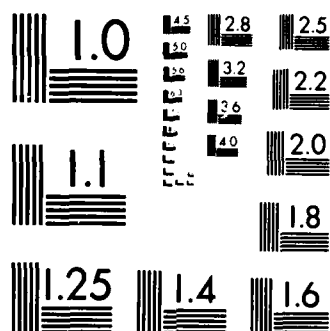
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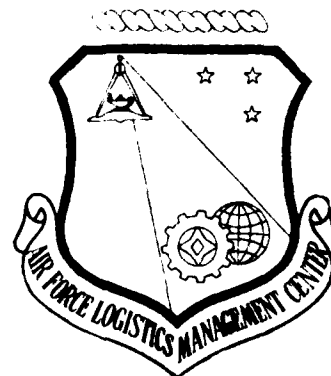


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# AIR FORCE LOGISTICS MANAGEMENT CENTER

AD-A153 697



LOCAL PURCHASE SUPPORT  
FOR OVERSEAS ACTIVITIES

BY

SALLY POWELL

AFLMC REPORT #800903

MARCH 1982

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# ABSTRACT

Long delivery times are experienced for local purchase (LP) items not available in overseas areas. Evaluation of alternative concepts to improve LP support for overseas activities indicates that establishment of overseas LP centers at Robins and McClellan AFBs will improve responsiveness for LP items not available in overseas areas. Estimated O&ST reductions resulting from alternative procedures are given. Projected savings and costs to establish the centers are provided.

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## EXECUTIVE SUMMARY

The objective of this study is to improve responsiveness for local purchase (LP) items not available in the overseas area. When overseas base contracting receives an LP requisition from base supply overseas, an attempt is made to buy the item locally. If it is not available, base contracting notifies base supply and base supply annotates the item record. From that point on, all requisitions for this item are submitted to the CONUS for wholesale procurement.

Currently, overseas activities forward requisitions for these items to any of 5 Defense Logistics Agency (DLA) depots, 11 General Services Administration (GSA) depots, or 5 Air Force Logistics Command (AFLC) depots. In most cases, shipments are made directly from vendors to the requesting activity overseas. The current average order and ship time (O&ST) for overseas LP items is 126 days, while the average O&ST for non LP items is 65 days.

In August 1980, HQ USAF/LEYS requested the AFLMC determine ways to improve O&ST for overseas LP items.

We evaluated several proposals:

- Establish overseas LP centers at selected MAC CONUS aerial ports.
- Establish centralized LP support activities in the PACAF, USAFE theaters.
- Establish overseas LP centers at the two Air Logistic Center Container Consolidation Points (CCPs).

- Retain current LP support responsibilities and improve or expand existing procedures.

We concluded that the establishment of CONUS LP contracting centers at the two ALC CCPs would do the most to improve overseas LP support. Under this approach, overseas LP requisitions would flow directly to Robins AFB for the European theater and to McClellan AFB for the Pacific Theater. Procurement action would be accomplished by the LP contracting centers, the vendors would ship to the LP contracting centers, where the materiel would be transhipped to the overseas area. Our evaluation indicates LP O&ST would be reduced by 57 days for the Pacific and by 45 days for the European theater.

While the thrust of this study was to determine how to increase effectiveness (decrease O&ST), we also looked at significant cost and potential savings. It was beyond the scope of this study to assess the resources or other Service support ramifications in DLA or GSA; however, adoption of our recommendation would definitely increase AFLC workload. Under the current system, 96 percent of these requisitions are handled by DLA or GSA. AFLC estimated it would require at least 462 additive manpower authorizations to assume this workload from DLA and GSA. When reductions in inventory and LP cost to order are combined with manpower, facilities, and hardware costs, there would be a one-time estimated savings of \$3.0 million for the first year. However, because the recommendation is manpower intensive, there would be a recurring annual cost of \$3.3 million after the first year.

## PREFACE

1. This report is a combined effort of the following AFLMC team members:

Lt Col Richard A. Lombardi, LGS  
Capt Jim Davis, LGT  
Capt Susan Alten, LGY  
Lt Guido Roncallo, LGY  
Mr. Willi Hahn, LGY  
SMSgt Barney Sullivan, LGC  
SMSgt Bud Britain, LGC  
Sally Powell, LGS, Project Manager

2. Separate studies developed for this research are:

- a. Wartime Contingency Concept  
WR-ALC/DSMP, Mr. Noble D. Teal
- b. Advanced Telecommunications  
AFDSDC/TM, Lt Broadwell
- c. Facilities Cost Estimate - WR-ALC/XRS, Les Clark  
SM-ALC/XRS, Roger Haviland
- d. Manpower Cost Estimate - HQ AFLC/XR

3. Detailed statistical data relative to transit times, wholesale Advice Code 2A requisition flow, REX 2 validation, Advanced Telecommunications, Improved Automated Support, and Estimated CCP Impact are on file at the AFLMC.



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## THE PROBLEM

1-1. Problem Statement. Local purchase (LP) support for overseas units is not responsive to user requirements. Order and ship time (O&ST) for overseas LP items averages 126 days while non-LP O&ST is averaging 65 days.

1-2. Objective. Identify methods or procedures to improve overseas LP support. This study does not attempt to address GSA/DLA/AFLC internal support procedures; rather, it examines other viable approaches which would reduce lead time for Air Force overseas LP requisitions purchased within CONUS.

1-3. Background.

a. During a visit to PACAF and WESTPAC units, Mr. Lloyd K. Moseman, Deputy Assistant Secretary for Logistics, SAF/ALG, noted that overseas activities were experiencing exceptionally long lead times for some of their requisitions. The longest lead times were for LP items not available overseas. On his return, he recommended the Air Staff evaluate ways to improve overseas LP support. In August 1980, HQ USAF/LEYS tasked the Air Force Logistics Management Center (AFLMC) to conduct a study and provide recommendations which would enhance LP support for overseas units.

b. The current procedure for requesting LP items not available overseas is to forward requisitions to the Defense Logistics Agency (DLA) depots, General Services Administration regional depots, or Air Force Logistics Command (AFLC) Air Logistics Centers (ALCs). While each wholesale source of supply

fills these requisitions using somewhat different internal procedures, communications delays are experienced by all. Off-line hard copy requisitions are mailed for non-NSN part numbered items. Additionally, both off-line hard copy requisitions and mechanized requisitions frequently require additional data which must be requested by telephone, message or letter. This causes, on the average, a 13 day delay. Many contracts to fill the requisitions are placed with small businesses not familiar with overseas packing and shipping requirements. A 10 day delay is routinely experienced while small businesses determine overseas packing/shipping/marketing specifications or container requirements. About 96 percent of these items are shipped by vendors directly to the overseas base. On the average, these shipments experience a 30-day delay in water ports. These are some of the factors which cause O&ST for these items to be from 18 to 77 days longer than O&ST for other requisitions in the Pacific and from 38 to 84 days longer for Europe. Other background data relative to REX 2 validation, expansion of wholesale stockage for overseas only, and increased LP volume, are discussed below.

(1) All three major sources of supply expressed concern over the validity of REX Code 2 assignment to Advice Code 2A requisitions received. A Requisition Exception (REX) Code 2 is assigned to LP items which are not available in the local overseas market. HQ USAFE stated their contracting personnel felt many items may have been originally certified as not available on the local market because item specifications could

not be related to commercial descriptions of locally available items. USAF base personnel speculated that by researching and developing locally prepared commercial item descriptions, or by making market surveys with physical samples, their buyers could probably find many items that are now coded REX 2. Sample bases were requested to revalidate REX 2 assignment, and from 71 to 98 percent were revalidated.

(2) The need for a procedure for NSN assignment to part-numbered LP items from overseas units surfaced during the course of this study. HQ AFLC/LOLC indicated that these requisitions are currently processed as "part-numbered procurements." Therefore, they are not stock numbered, regardless of number of demands, because there is no existing procedure for NSN assignment. Joint Regulation (DLA 4140.56, AFR 67-36, AR 708-3, etc.) "Recording of User Interest" has been under revision for the past two years by a joint service/agency task group. The draft procedures place responsibility for assignment of stock numbers to part numbered requisitions having sufficient demands with the appropriate source of supply. Milestones for accomplishment are currently being planned. After stock number assignment, REX 2 items which build sufficient demand history are transferred from "Local Purchase" to "Stocked for Overseas" by GSA/DLA. This will shorten lead times to some degree, for about 20 percent of the REX 2 items.

(3) Under the Commercial Item Support Program (CISP) and the Civil Engineering Support Program (CESP) some 8,500 items were re-coded Acquisition Advice Code (AAC) "L" - Local Purchase.

However, the additional workload strained base-level resources and created stockage problems. Many of the items re-coded "L" were returned to wholesale AACs. DLA is re-evaluating CISP and CESP efforts, but no significant increase due to the CISP/CESP program in AAC "L" items is currently foreseen.

(4) HQ USAFE estimated their current REX 2 volume at 8,000 requisitions per month. HQ PACAF estimated their current REX 2 volume at 2,000 requisitions per month. Approximately 52 percent of REX 2 NSNs are Air Force peculiar. Statistics in Table I are estimated from data collected for this study.

TABLE I

	<u>Europe</u>	<u>Pacific</u>	<u>Total</u>
DLA	65%	64%	65%
CSA	30%	32%	31%
AFLC	5%	4%	4%
Line Items	52,700	19,100	71,800
Part Numbers	60.5%	60%	60%
"L" Numbers	6.5%	5%	6%
Stock Numbers	33%	35%	34%
*Electronics FSCs	4.4% (2300 LI)	13.6% (2600 LI)	6.8% (4900 LI)
*Military Construc- tion FSCs	2.7% (1400 LI)	4.7% (900 LI)	3.1% (2300 LI)
\$ Value	\$8.0M+	\$2.0M+	\$10.0M+

\* Data segregated according to HQ USAF/LEY tasking.

TABLE II

PROPOSED VENDOR-CONTRACTING CENTER-REQUISITIONERMANPOWER REQUIREMENT

	<u>SM-ALC</u>		<u>WR-ALC</u>	
	<u>Estimated Personnel Equivalents (PEs)</u>	<u>Estimated Average Grade</u>	<u>Estimated Proposed PEs</u>	<u>Estimated Average Grade</u>
Administrative	3	GS-3	3	GS-3
Comptroller	15	GS-7	31	GS-7
Distribution	53	GS-9	169	GS-9
Base Contracting	33	GS-9	84	GS-9
Base Operating Support (18%)	<u>19</u>	GS-3	<u>52</u>	GS-3
TOTAL PEs:	123		339	

Source: HQ AFLC Manpower and Organization Estimate

about whether the materiel was actually shipped in good condition they may be resolved by processing the item through inspection at the ALC. If any export-packing problems occur, additional required protection can be added when the item is put into the consolidated container. Packing cost will be reduced, since the vendor will package/pack for shipment to the CONUS ALC LP center, where Priority Group 3 freight will be consolidated for CCP shipment.

(f) Manpower Cost. This alternative would generate an additional workload for AFLC. Approximately 96 percent of the current workload belongs to DLA/GSA. Therefore, an additional 115,000 requisitions per year would have to be processed by AFLC. HQ AFLC Manpower and Organization provided a preliminary additive manpower estimate on Table II for manning the LP contracting centers recommended in this study.

(g) In summary, this alternative appears to have significant merit, since it would decrease O&ST for all Priority Groups. However, additional AFLC manning would be required, it would necessitate a \$10 million stock fund transfer, and as will be shown later, it will cost approximately \$3.3 million per year.



evaluation, we believe this is due largely to CCP processing and routing. Since eighty percent of the requisitions from Europe and 50 percent of the requisitions from the Pacific are Priority Group 3, this is a significant fact.

(b) Paying for Items Supported. We find no reason why the current accounting and finance procedures -- entry into the D033 system when the requisition is received via updated AUTODIN/mini-computer -- should be changed. A General Support Division stock fund transfer of an estimated \$8 million to Robins AFB and \$2 million to McClellan AFB would probably be required to implement this alternative. At the overseas bases there would be no change to O&M accounts.

(c) Advanced Telecommunications. For the short term, use of upgraded AUTODIN telecommunications along with a TI 990-4 mini-computer, or comparable, will shorten communications time an estimated 16 days for PG 1 & 2 and 13 days for PG 3, as shown at Appendix C, and allow timely requests and response for additional identifying or descriptive data. Arrangements with the Data Automatic Addressing System (DAAS) to transmit Air Force Advice Code 2A requisitions to the two ALC Local Purchase contracting centers will be required.

(d) Command and Control. Establishment of LP contracting centers reporting to the command supported with a support agreement for use of ALC facilities and services was suggested. However, this decision must be jointly coordinated by HQ AFLC and the using commands.

(e) Inspection/Packing. If any uncertainties arise

ESTIMATED AVG O&ST FROM AN LP CONTRACTING CENTER AT AN ALC CCP  
(McClellan AFB)

To	PG 1			PG 2			PG 3		
	Est.	Current	Days +/-	Est.	Current	Days +/-	Est.	Current	Days +/-
Clark	58	140	-82	52	121	-69	65	141	-76
Hickam	43	141	-98	42	85	-43	67	77	-10
Osan	49	82	-33	45	89	-44	66	145	-79

(4) Estimated O&ST under the vendor-ALC-requisitioner concept appears to offer the most responsive support. An estimated 38-day improvement in lead-time from better transportation, communications, and improved control would result from this concept at Robins AFB in lieu of vendor-direct shipping. An AFLC study entitled "AF Containerization Study," HQ AFLC/LOT, reached the same conclusion - that vendor shipments through water ports cause extended lead-times of 30 days or longer. Establishing a single LP contracting center point of contact and using upgraded AUTODIN with a minicomputer offer an approximate 13-day improvement according to data collected for this study. Deleting the requirement for small businesses to research packaging/shipping/marketing specifications or purchase overseas packing/shipping containers may save as much as 10 days, according to coordinated research with base contracting and packaging personnel at the ALCs.

(5) Subjective discussions follow.

(a) Inclusion of Priority Groups. All priority groups would experience improved O&ST if the LP contracting centers are located at ALC CCPs. AFLC currently provides the best support for Priority Group 3 requisitions and based on our

strategy with the additional requirement for the ALCs to identify domestic requisitions on the CIAPS retrieval. Also, average transit time from Robins AFB and McClellan AFB was used in lieu of MAC average transit times, since shipments would be made from ALC CCP locations, under this concept.

(b) Vendor Direct Shipments. Defense Automatic Addressing System (DAAS) collected Vendor Direct Shipment ("BV") Status Cards for vendor direct shipments from WR-ALC and SM-ALC to sample bases for September 1981. The time from the requisition date on the Status Card to the contract shipping date provided a measure of time from the requisition date to the date shipped for these items. WR-ALC and SM-ALC average shipping time extracted from DAAS was combined with the time from the requisition date to the contract shipping date on WR-ALC and SM-ALC "BV" Status Cards to sample bases to estimate O&ST.

(3) Results of vendor-ALC-requisitioning activity analysis follow. A comparison with vendor-direct shipments is at Appendix B.

ESTIMATED AVG O&ST FROM AN LP CONTRACTING CENTER AT ALC CCP (ROBINS)

<u>To</u>	PG 1			PG 2			PG 3		
	<u>Est.</u>	<u>Current</u>	<u>Days +/-</u>	<u>Est.</u>	<u>Current</u>	<u>Days +/-</u>	<u>Est.</u>	<u>Current</u>	<u>Days +/-</u>
Rhein-Main	51	72	-21	61	99	-38	72	153	-81
Incirlik	52	66	-14	61	110	-49	58	92	-34
Hellenikon	48	108	-60	90	92	-2	63	149	-86

Payment problems were mentioned by both HQ USAFE and HQ PACAF. Such a concept would require a wholesale billing process at the retail level. Problems with tracing and foreign customs processing were also mentioned.

(c) Advanced Telecommunications. The need for a TELEX system to communicate with CONUS sources of supply was mentioned by both HQ USAFE and HQ PACAF.

(d) Command and Control. Both HQ PACAF and HQ USAFE recommended that the centers be under their control.

(e) Inspection/Packing. Damage to items shipped directly by vendors has not been significant enough to warrant a change in this policy according to HQ USAFE and HQ PACAF. In most instances, this type packing is specifically designed for the item and provides adequate protection.

(f) In summary, this concept is not recommended in this study due to the extended lead times for current LP purchases from CONUS by overseas activities shown at Appendix B. In addition, intratheater communications are not easily adaptable at this time and the overall thinking command-wide was that the cost would be prohibitive and the quality degraded.

c. ESTABLISH OVERSEAS LP CENTERS AT THE TWO ALC CCPs.

(1) Determine current LP REX Code 2 O&ST. Current REX Code 2 O&ST data, as described in the first strategy, was used as the baseline for this approach also.

(2) Estimate O&ST for the proposed strategy.

(a) Vendor-ALC-Requisitioning Activity. We estimated O&ST the same way it was estimated for the first

Note (\*) Data was extracted from overseas sample bases making CONUS purchases. The Contracting Administrative Lead Time (CALT) is not stratified by Priority Group on the CIAPS retrieval request. This is a composite figure including all Priority Groups.

Note (\*\*) Data was not received from Incirlik AB.

ESTIMATED AVG O&ST FROM A CENTRALIZED LP CONTRACTING CENTER WITHIN AN EXISTING OVERSEAS CENTER/REGION

	<u>Est. REX 2 O&amp;ST From ALC Contracting Center</u>	<u>Current Overseas (*) CONUS O&amp;ST</u>	<u>Days +/-</u>
Hickam (**)	67	84.6	+17.6

Note (\*) Data was extracted from overseas sample bases making CONUS purchases. The CALT is not stratified by PG on the CIAPS retrieval request. This is a composite figure including all PGs.

Note (\*\*) Data was not received from Clark and Osan ABs.

(4) The HQ PACAF/LGC position is that this is not a viable solution. They stated that PACAF activities which do a significant amount of CONUS buying today tend to have a Contracting Administrative Lead Time (CALT) about 100 percent higher than the Air Force average. They attribute this to time differences, difficulties in placing long distance telephone calls and in communications with vendors.

(5) Discussion of pertinent subjects follows.

(a) Support of Priority Groups. All Priority Groups were considered since no communications, transportation, or management advantages/disadvantages are associated with a particular Priority Group under this alternative.

(b) Paying for Items Supported by the LP Center.

aerial ports, however, additional personnel would be required to consolidate and tranship the Priority Group 3 items to water ports.

(e) In summary, this alternative is not recommended. While it would reduce O&ST for Priority Groups 1 and 2, it would not improve Priority Group 3. Also, it would significantly impact the current Standard Base Supply System (SBSS) support, and generate vendor payment problems.

b. ESTABLISH CENTRALIZED LP SUPPORT RESPONSIBILITIES WITHIN EXISTING OVERSEAS THEATER CONTRACTING REGIONS/CENTERS.

(1) Determine current LP REX Code 2 O&ST. Current CONUS purchasing O&ST data was used as the baseline for this approach. A CIAPS retrieval request was run by overseas bases to extract all CONUS purchases. The CIAPS retrieval listed the time from the requisition date to the date of receipt overseas for individual CONUS purchases.

(2) Current CONUS purchasing O&ST was compared with estimated O&ST from an ALC overseas LP contracting center. Results of this O&ST comparison follow.

ESTIMATED AVG O&ST FROM A CENTRALIZED LP CONTRACTING CENTER  
WITHIN AN EXISTING OVERSEAS CENTER/REGION

	<u>Est. REX 2 O&amp;ST from ALC Contracting Center</u>	<u>Current Overseas (*) CONUS O&amp;ST</u>	<u>Days +/-</u>
Rhein-Main	72	94	+22
Hellenikon (**)	63	137	+74

(b) Paying for Items. The funding ramifications would create a significant problem for the Dover and Travis Standard Base Supply System (SBSS). The impact on the base stock fund program and management problems associated with large on-order and intransit accounts would create a managerial balloon effect at both bases. We believe that the problems created would be larger than the problem solved. Also, we do not believe that any improvement in Priority Group 3 O&ST would be achieved whether items are shipped direct from the vendor or received at Dover/Travis, then transferred to the receiving base.

(c) Use of Advanced Telecommunications Equipment. Types of advanced telecommunications equipment available were analyzed in a separate study by the Air Force Data Systems Design Center (AFDSDC/TM). In general, they found that by using advanced telecommunications, the ordering base could go directly to an LP center where interface with a minicomputer would process the requisitions. LP center personnel would have a direct line to the customer to obtain additional descriptive data. This would also provide a segregation of these requirements from normal Dover/Travis base supply requirements. Upon proof of shipment (Certificate of Conformance, or COC) Accounting and Finance at Dover/Travis would pay the bill using the accounting and disbursing station number of the requesting base. However, such advanced telecommunications equipment would not mitigate problems which impact on the SBSS.

(d) Inspecting and Packing. Contractor-direct shipments would not require inspecting and packing at the MAC

### EUROPEAN THEATER

ESTIMATED AVERAGE O&ST FROM AN LP CONTRACTING CENTER AT A MAC AERIAL PORT (DOVER)

To	PG 1			PG 2			PG 3		
	Est.	Current	Days +/-	Est.	Current	Days +/-	Est.	Current	Days +/-
Rhein-Main	68	72	-4	69	99	-30			(*)
Incirlik	71	66	+5	72	110	-38			
Hellenikon	71	108	-37	71	92	-21			

Note (\*) PG 3 O&ST was not collected or estimated from MAC aerial ports since it is not air eligible and would not substantially improve current O&ST.

### PACIFIC THEATER

ESTIMATED AVERAGE O&ST FROM AN LP CONTRACTING CENTER AT A MAC AERIAL PORT (TRAVIS)

To	PG 1			PG 2			PG 3		
	Est.	Current	Days +/-	Est.	Current	Days +/-	Est.	Current	Days +/-
Clark	67	140	-73	66	121	-55			(*)
Hickam	65	141	-76	65	85	-20			
Osan	67	82	-15	66	89	-23			

Note (\*) PG 3 O&ST was not collected or estimated from MAC aerial ports since it is not air eligible and would not substantially improve current O&ST.

(4) The subjects of Priority Groups, paying for the items, advanced telecommunications equipment, command and control, inspecting and packing are discussed below.

(a) Inclusion of Priority Group 3 Requisitions. We could see no advantage to including Priority Group 3 items for purchasing from aerial port contracting centers, since Priority Group 3 items are not air eligible and improvement over the current system would be minimal. It must be recognized that an estimated 80 percent of the European Theater REX 2 workload is Priority Group 3.



(CALT) from date of the requisition to actual delivery date at Dover/Travis AFBs. HQ MAC furnished transit times for Priority Groups 1 and 2 requisitions, including total processing time, from Dover and Travis AFBs to sample overseas bases. MAC transit time, including total processing time, was combined with lead-time extracted with the CIAPS retrieval request to complete this estimate of O&ST.

2. Vendor-Direct Shipments. The MAC bases extracted the time from the requisition date to the date of award (Contracting Administrative Lead Time, or "CALT") with the CIAPS retrieval described above. The second part of this O&ST estimate is average contractor, or "production," lead time. We developed this from Defense Automatic Addressing System (DAAS) "BV" (vendor direct shipments) status data, which provided the time from the requisition date to the shipping date for vendor-direct shipments. Dover/Travis CALT was substituted for ALC CALT since the status data related to ALC shipments because MAC does not make vendor-direct shipments. The third part of this estimated O&ST is MAC average transit time, described above. These three lead time estimates were combined to approximate O&ST for contractor direct shipments for purchases made by a contracting center located at a MAC aerial port.

(3) Based on our data analysis, reduced O&ST for Priority Groups 1 and 2 requisitions appears to be possible under this strategy. The vendor-contracting center-requisitioning activity data shown below is more favorable than the vendor-direct data shown in Appendix B.

contracts-electronics and construction. The results of this evaluation are at Appendix E.

2-2. Alternatives. The following analysis was conducted on each proposed alternative LP support strategy.

a. ESTABLISH OVERSEAS LP CENTERS AT SELECTED MAC CONUS AERIAL PORTS.

(1) Determine current LP REX Code 2 O&ST. The time from the date the requisition is initiated to receipt of the material at the overseas Base Supply activity was totalled and averaged by Priority Group and source of supply from Pipeline Time Cards (PTCs) collected from 2 USAFE (Hellenikon, and Incirlik), 1 MAC (Rhein Main), and 3 PACAF (Clark, Hickam, and Osan) sample bases. This provided the baseline for evaluation.

(2) Estimate O&ST for the proposed strategy.

(a) REX Code 2 card decks from the sample bases were forwarded to Dover and Travis AFBs. The MAC bases were asked to run a utility program to match NSNs/part numbers, then return the matched NSNs/part numbers to the AFLMC. The AFLMC randomly selected NSNs/part numbers to be inserted in a Customer Integrated Automated Purchasing System (CIAPS) retrieval request.

(b) O&ST was estimated for both vendor-contracting center-requisitioning activity and vendor direct shipments.

1. Vendor-Contracting Center-Requisitioning Activity. We forwarded the sample NSN/part number card deck to the proposed MAC base locations with a CIAPS retrieval request. This retrieval provided Contracting Administrative Lead Time

- Improve or expand existing procedures relative to REX Code 2 part numbered item NSN assignment, permitting increased wholesale stockage for overseas.

b. To perform the evaluation we determined that we must gather actual O&ST data for LP items and compare it with the O&ST for all requisitions. Next, collect current O&ST for REX 2 items from Pipeline Time Cards (PTCs), and compare O&ST for REX 2 items with O&ST for non LP items. Overall results are shown below. Specific data by base and source of supply is found at Appendix A.

	<u>Avg O&amp;ST All Requisitions</u>	<u>REX 2 Avg O&amp;ST (Advice Code 2A Requisitions)</u>
Clark	68	141
Hickam	59	77
Osan	68	145
Hellenikon	74	149
Incirlik	54	92
Rhein Main	69	153

c. Determine if O&ST for vendor-direct shipments or vendor-to-LP-contracting center to requisitioner shipments was better. Specific O&ST for vendor direct versus vendor-ALC-requisitioner shipments reflects better O&ST is probable under the vendor-ALC-requisitioner concept as shown at Appendix B.

d. In addition, evaluate how much improvement could be obtained by using indefinite delivery - open end contracts in lieu of purchasing the items within the local economy. Our HQ USAF/LEYS tasking directed us to evaluate two major categories of items which may be suitable for indefinite delivery-open end

## RESEARCH AND DEVELOPMENT

### 2-1. Methodology.

a. Evaluate what changes or alternative LP support concepts would offer improvement in overseas support.

(1) While there are a number of alternative ways to solve this problem, we selected the four most promising. By locating LP contracting centers at MAC aerial ports, O&ST for Priority Groups 1 and 2 shipments, which are air eligible, can be improved. By centralizing requisitioning at ALC Container Consolidation Points (CCPs) O&ST for Priority Group 3, or routine, shipments can be improved. Better control for the using commands would result if LP contracting centers were established in existing contracting regions/centers overseas. These three possible alternatives led to a fourth, which dealt with increased depot level stockage of LP items specifically for overseas activities.

(2) In summary, we evaluated each of the following alternatives.

- Establish overseas LP centers at selected MAC CONUS aerial ports.
- Establish centralized LP support responsibilities within existing PACAF/USAFE theater contracting regions/centers.
- Establish LP centers for overseas activities at the two Air Logistics Center (ALC) Container Consolidation Points (CCPs).

8. IMPROVE/EXPAND EXISTING PROCEDURES RELATIVE TO REX CODE 2  
PART NUMBERED ITEM STOCK NUMBER ASSIGNMENT.

(1) During the development of the initial phase of this project we learned that there is currently no specific procedure for stock number assignment for REX Code 2 part-numbered items. Joint Regulation (DLA 4140.5G, AFR 67-23, AR 708-3, etc.), "Recording of User Interest" provides that Defense Supply Centers will inform the military services of overseas part numbered item demands. There is a draft revision to this regulation now being coordinated which would place this responsibility with the wholesale source of supply. The major unresolved issue is the resources requirement associated with the cataloging action. We encourage the successful conclusion of these negotiations since data collected for this study indicates responsiveness would be improved if the stock numbering issue can be solved. Our objective under this alternative, therefore, was to determine how much responsiveness would improve if a stock numbering procedure was established for these items.

(2) After stock number assignment, items receiving sufficient demands and meeting other "stocked for overseas only" criteria would be changed from Acquisition Advice Code (AAC) "L," Local Purchase, to AAC "K," and become "stocked for overseas use," theoretically reducing pipeline time. To evaluate this concept, we took the following actions.

(a) We extracted the demand history for REX 2 items. The percentage of the part-numbered items having three or more demands within 365 days (Air Force NSN criteria) was developed.

(b) Current O&ST collected with Pipeline Time Cards

(PTCs) was totalled and averaged separately for JB2 AAC "L" (Local Purchase) requisitions and for DLA SXX and GSA GXX AAC "K" (stocked for overseas) requisitions. Responsiveness was compared to determine if a significant improvement could be obtained from this approach, as shown in Appendix A and the following tables.

(3) Some improvement over current REX 2 O&ST is shown. However, the ALC LP contracting centers could provide an average estimated 23 day improvement over DLA lead-time and an average estimated 27 day improvement over GSA lead-time. DLA-GSA O&ST for items stocked for overseas only is not as favorable as O&ST estimated from LP contracting centers at ALC CCPs.

	Current O&ST Stocked for Overseas Only (In Days)		Estimated O&ST LP Contracting Centers at ALC CCPs (In Days)		
	<u>DLA</u>	<u>GSA</u>		<u>DLA +/-</u>	<u>GSA +/-</u>
Clark	165	128	65	+100	+ 63
Hickam	66	49	67	- 1	- 18
Osan	84	116	66	+ 18	+ 50
Rhein-Main	68	91	72	- 4	+ 19
Incirlik*	80	80	61	+ 19	+ 19
Hellenikon**	67		63	+ 4	
				+136 ÷ 6 = + 23	+133 ÷ 5 = + 27

\* Data relates to PG 2 shipments; no PG 3 DLA shipments made during data collection period.

\*\* No GSA shipments made during data collection period.

Analysis of a random sample of REX 2 item records revealed that 60 percent are part numbered REX 2 items. According to current

Air Force stock numbering criteria based on a 3-hit philosophy, 32 percent would be eligible for NSN assignment, or roughly one-fifth of these items would, therefore, be eligible for stockage at the wholesale level. O&ST for the remaining 80 percent of the items would not improve by expansion of current wholesale stockage.

(4) In summary, an average 47 day improvement over current O&ST for these items is possible if these items were stocked for overseas only by DLA/GSA, as shown below. However, it would ultimately improve O&ST for only about one-fifth of the items because only an estimated one-fifth of the items have sufficient demands to warrant stockage.

	<u>Current O&amp;ST LP Non-Stocked</u>	<u>Current O&amp;ST LP Stocked for Overseas</u>	<u>+/-</u>
Clark	141	139	- 2
Hickam	77	64	- 13
Osan	145	90	- 55
Rhein-Main	153	70	- 83
Incirlik	92	-	-
Hellenikon	149	67	- 82
			<u>-235</u>
			÷ 5
			= -47

## CONCLUSIONS

3-1. Location of LP contracting centers at MAC Aerial Ports would improve O&ST for Priority Groups 1 and 2. However, 80 percent of the requisitions from Europe and 50 percent from PACAF are Priority Group 3. Therefore, establishment of LP contracting centers at MAC Aerial Ports would improve O&ST for only 20 percent of the requisitions from Europe and 50 percent of the requisitions from PACAF. This alternative is not recommended.

3-2. Support from overseas LP centers in existing overseas centers/regions requires 23-54% more lead time than estimated O&ST for purchases made from LP contracting centers at ALC CCPs. In addition, difficulties with communications and vendor payment are foreseen. This proposal was not selected.

3-3. Stocking LP items not available overseas for overseas use only at wholesale sources of supply would improve O&ST for an estimated one-fifth of these items. However, O&ST for the other four-fifths of these items would not improve. This proposal was not selected.

3-4. Establishment of LP contracting centers at ALC CCPs will provide the most favorable O&ST improvement. Improved support ranging from 34 to 86 days in Europe and from 10 to 79 days in the Pacific is possible. Both cost and benefits outside the Air Force are beyond the scope of this study. However, this concept would cost the Air Force an estimated \$3.3 million per year after the first year. The feasibility of a manpower transfer from



DLA/GSA is beyond the purview of this study, however, a significant workload would migrate to AFLC. Because of the increased workload at the two ALCs, we believe that implementation of this concept is contingent upon AFLC additive manpower availability. An economic analysis is at Appendix D, and is summarized below.

3-5. Economic Analysis. The Local Purchase cost to order, or cost to accomplish the workload associated with a local purchase requisition, manpower cost, transportation cost, facilities cost, and hardware cost are estimated and quantified on Table III. While an initial savings is shown due to a one-time inventory reduction, there will be an approximate \$3.3 million per year cost, assuming manpower is not transferred with workload. Data provided is based upon preliminary organizational structure outlined in this study. A more refined economic analysis would be necessary once all organizational details are finalized. Methodology is at Appendix D. The SBSS impact resulting from projected O&ST reduction relates to reduced order and shipping time quantity (O&STQ), safety level quantity (SLQ) and holding cost. The number of reparables is less than 1 percent, therefore, computations relate strictly to economic order quantity (EOQ) items. We estimate a one-time net savings of \$2.995 million resulting from reduced O&STQ and SLQ and a recurring reduction in holding cost detailed at Appendix D. Old and new O&ST are developed from data collected for this study. Other data required to estimate the savings were extracted from

REX 2 item records. We developed and executed an item-by-item computerized program to determine savings. Savings relate to stocked REX 2 items; nonquantifiable benefits apply to nonstocked REX 2 items. Items other than "NF" equipment items having five or more demands were identified as stocked items. Improved supply support and reduced end-item down time accrue from reduced pipeline time for nonstocked items. We project a one-time reduction in O&STQ and SLQ of 19 percent and a recurring reduction in holding cost of 2.7 percent.

TABLE III  
Part I

ESTIMATED COST BENEFITS FOR  
THE FIRST YEAR

	<u>COST</u>	<u>BENEFITS</u>	<u>+/-</u>
Facilities	\$ .174M		
Hardware	\$ .120M		
Manpower	\$ 7.993M		
Inventory			
O&STQ + SLQ		\$ 6.600M	
Holding Cost		\$ .282M	
LP Cost to Order		<u>\$ 4.400M</u>	
Sub Totals	\$ 8.287M	\$11.282M	+\$2.995M

Approximate First Year Savings = \$3.0M

TABLE III  
Part II

ESTIMATED COST BENEFITS AFTER  
THE FIRST YEAR

	<u>COST</u>	<u>BENEFITS</u>	<u>+/-</u>
Manpower	\$ 7.993M		
Inventory			
Holding Cost		\$ .282M	
LP Cost to Order		<u>\$ 4.400M</u>	
Sub Totals	\$ 7.993M	\$ 4.682M	-\$3.311M

Approximate Annual Recurring Cost = \$3.3M

## RECOMMENDATIONS

4. We recommend that Local Purchase contracting centers be established at WR-ALC and SM-ALC CCEs under the vendor-ALC-requisitioner shipping concept. Appendix C provides an outline of some of the key technical issues associated with this recommendation.

## ABBREVIATIONS

AAC	Acquisition Advice Code
ADPE	Automatic Data Processing Equipment
AFDSDC/TM	Air Force Data Systems Design Center/Telecommunications
AFLC	Air Force Logistics Command
ARPANET	Advanced Research Project Agency Network
AUTODIN	Automatic Digital Network
CCP	Container Consolidation Point
COC	Certificate of Conformance
COPAD	Contractor Operated Parts Depot
DLA	Defense Logistics Agency
DO33	AFLC Inventory Management Stock Control and Distribution System
EOQ	Economic Order Quantity
FOB	Free on Board
GSA	General Services Administration
LOGAIR	Logistics Airlift
LP	Local Purchase
MAC	Military Airlift Command
MINET	Movements Information Network
O&ST	Order and Shipping Time
O&STQ	Order and Shipping Time Quantity
PACAF	Pacific Air Force
REX 2	Requisition Exception Code 2
SLQ	Safety Level Quantity

TELEX

Telephone Exchange

UMMIPS

Uniform Materiel Movement and  
Issue Priority System

UNIX

Software for Movements  
Information Network

USAFE

U.S. Air Force Europe

## GLOSSARY

Acquisition Advice Code: A coding structure relating to acquisition of materiel, e.g., "Service Regulated," "Local Purchase", "Stocked for Overseas Only."

Advanced Research Project Agency Network: Network of computer hosts and users linked together via communications lines and satellites.

Advice Code 2A: Item is not locally obtainable through manufacture, fabrication, or procurement. This code is automatically assigned on requisitions whenever a requisition exception code 2 is stored on an item record.

Container Consolidation Point: Containerization center for surface shipments where overseas shipments are containerized and transported to the water port of embarkation.

Cost to Order: The sum of the administrative expenses involved in requisitioning, purchasing and receiving of materiel.

Economic Order Quantity:  $\text{Square root of } 2 \times \text{Cost to Order} \times \text{Annual Demands} \div \text{the Holding Cost Rate} \times \text{Unit Price}.$

Holding Cost: Monetary penalty for retaining inventory for future use, consisting of investment charge, forecast error and obsolescence, inventory losses, and storage cost.

Order and Shipping Time Quantity: Quantity required to be on hand to meet demands during the period represented by order and shipping time.

Order and Shipping Time: Interval of time from requisition date until receipt of the item by the requisitioning activity.

Requisition Exception Code 2: SBSS Code indicating "No LP-LM Source Available."

Safety Level Quantity: Assets required to be on hand to permit continuous operation in the event of minor interruption of normal replenishment or unpredictable increases in demands.

Uniform Materiel Movement and Issue Priority System: Time standards for the movement of materiel.

APPENDIX A

CURRENT O&ST

AFLC, DLA, & GSA TO SAMPLE

MAC, USAFE BASES



CURRENT O&ST

(IN DAYS)

ALL SOURCES OF SUPPLY

	<u>Priority Group</u>	<u>LP Stocked for Overseas only</u>	<u>LP Not Stocked for Overseas</u>	<u>Average All Req'n O&amp;ST (LP and Non-LP)</u>	<u>UMMIPS</u>	<u>175% UMMIPS</u>
Rhein Main	1	54	72		12	21
	2	52	99		16	28
	3	70	153	69	69	121
Incirlik	1	50	66		12	21
	2	80	110		16	28
	3	(*)	92	54	69	121
Hellenikon	1	(*)	108		12	21
	2	(*)	92		16	28
	3	67	149	74	69	121
Clark	1	73	140		13	23
	2	64	121		17	30
	3	139	141	68	84	147
Hickam	1	(*)	141		8	14
	2	38	85		12	21
	3	64	77	59	31	54
Osan	1	55	92		13	23
	2	89	115		17	30
	3	90	145	68	84	147

\* No shipments made during data collection period.

CURRENT O&ST

(IN DAYS)

SOURCE OF SUPPLY: 1-A

	<u>Priority Group</u>	<u>LP Stocked for Overseas only</u>	<u>LP Not Stocked for Overseas</u>	<u>Average All Req'n O&amp;ST** (LP and Non LP)</u>	<u>UMMIPS</u>	<u>175% UMMIPS</u>
Rhein-Main	1	54	72		12	21
	2	52	56		16	28
	3	68	117	69	69	121
Incirlik	1	50	65		12	21
	2	80	102		16	28
	3	(*)	78	54	69	121
Hellenikon	1	(*)	121		12	21
	2	(*)	74		16	28
	3	67	112	74	69	121
Clark	1	73	76		13	23
	2	64	121		17	30
	3	165	122	68	84	147
Hickam	1	(*)	141		8	14
	2	38	85		12	21
	3	66	77	59	31	54
Osan	1	36	82		13	23
	2	94	89		17	30
	3	84	136	68	84	147

\* No shipments made during period of data collection.

\*\* This is a composite O&ST from all sources of supply to sample bases.

support is marginal, and unsatisfactory for wartime. Assuming AUTODIN is inoperable, ARPANET may be used as a CONUS back-up system. A minicomputer such as the TI 990-4 which will communicate with ARPANET, in addition to AUTODIN, will provide continuity. The minicomputer must also be capable of communicating with Movements Information Network (MINET) (scheduled for prototype during 1981-82), which is purported to be a secure electronic mail system in the European Theater. MINET will provide an inter and intratheater telecommunications capability vital to the control and coordination of logistics support in both peace and war. When MINET becomes operational, it will decrease costly peacetime problems and upgrade wartime responsiveness.

7. While all data and the associated analysis indicate that the ALC CCP concept has significant merit, more detailed implementation planning will be required before a "go ahead" decision is made.

9. War Support Issues.

a. Civil Engineering, Transportation and other nonflying organizations perform key roles in sustaining wartime combat operations. Much of this material is obtained through LP action. In wartime, the support problem will be compounded by unforecasted requirements from air base damage and different wartime consumption patterns. Supply support for these items is vital. In a wartime situation, the transportation and communications for these items would be the same as those for ALC centrally-managed items.

b. Assuming commercial shipping lanes become clogged, Priority Groups 1 and 2 shipments may be routed via LOGAIR and military air, sharing this service with other priority traffic that normally travels by commercial carrier. The use of the CCP is not included in the time-phased cargo movement force deployment data; however, a study is being conducted by HQ USAF/LETT and HQ AFLC to determine feasibility of using the CCP in a wartime environment.

c. The Military Postal Service Agency (MPSA), DOD Single Manager for postal matters, is coordinating a DOD manual which recognizes a need for a policy governing wartime mail movement. The manual will embargo all except official and letter mail. MPSA is attempting to quantify the anticipated official mail volume and weight.

d. Current data communications are provided by AUTODIN, commercial, unsecure TELEX, US military and commercial telephone, APO and host nation mail, and US military courier. The peacetime

research. The remaining days offer potential communications savings of 16 days for Priority Groups 1 and 2 and 13 days for Priority Group 3.

6. A second reduction of O&ST is possible from elimination of packaging/shipping/marketing queries from small businesses. The majority of these contracts are placed with small businesses. These small businesses require approximately 10 days to obtain and comply with packaging, shipping, and marking specifications for overseas destinations.

7. The greatest reduction appears to be possible from changing current shipping procedures for these items. Our data definitely shows a decrease in O&ST for shipments made from ALC CCPs versus shipments made directly by vendors to overseas destinations. A HQ AFLC/LOT study entitled "AF Containerization Study", 15 Dec 78, and "Capabilities Plan Paper", HQ AFLC/XRXC, 78-6, reached the same conclusion - that O&ST could be reduced as much as 30 days by shipping through the Container Consolidation Points instead of through water ports. If a container is improperly marked, for instance, long delays occur at water ports.

8. Paying for the items would be accomplished using existing Accounting & Finance systems at the ALCs. Vendors forward a DD Form 250 for payment, the D033 system interfaces with the D050 FIA system, and the H042C system bills and stock fund transfers to the requesting activity.

comparable, minicomputer to become operational on or about that date is recommended. Upgraded AUTODIN service will provide a time savings by not going through the Telecommunications Center prior to receipt. Requests for additional descriptive/funding/identifying data could be sent and received directly from the contracting centers.

4. When electronic mail becomes operational in the overseas areas, the TI 990-4 has the necessary physical connector 2510 plug for MINET; it also uses RS232 communications for tying into the ARPANET back-up system in CONUS. The "Dial Up Teletype" (TTY) is also available. A long term plan to use real time electronic mail such as Movements Information Network (MINET) as it becomes operational in Europe appears to be the best alternative currently. The MINET system will be managed by the Defense Communications Agency (DCA) and it will be a "military common user" system. There will be no charge for traffic and it purports to be secure during a wartime contingency. The MINET subsystem backbone configuration and terminal access configuration are attached.

5. Average current time for requisition transmission/ALC coordination from the overseas activity to receipt by Base Contracting at the ALC is estimated from CIAPS retrieval data to be 17.5 days at SM-ALC and 18.1 days at WR-ALC. A part of this time is required for research purposes. SM-ALC/DSD and WR-ALC/DSD estimate an average of 2 days are required for Priority Groups 1 and 2 research and 5 days are required for Priority Group 3

1. It is proposed that overseas activities submit requisitions directly to LP contracting centers at the two ALC CCPs via upgraded AUTODIN. Initially, a minicomputer system with existing software could provide the interface between AUTODIN and the ALC data systems.

2. An excerpt from DATAPRO describing Texas Instruments DS990 Model 4 is attached for consideration in selection of a minicomputer. A listing of necessary hardware to accommodate the projected 8,000 requisitions/month WR-ALC workload is also attached. Hardware for 2,000 requisitions/month at SM-ALC would be identical. There is a \$25,000 Government-owned software package available which allows the necessary communication between the TI-990 and the D033 system. Availability of this software and the potential savings resulting from it are factors to be considered. The TI990-4 has 2780 protocol for interface with AUTODIN. It will communicate with the 360-40, 360-65 and Phase IV hardware as planned D033 transfers occur.

3. According to a separate study provided by Lt Broadwell, Air Force Data Systems Design Center (AFDSDC/TM), upgraded AUTODIN service is immediately achievable, at no additional cost. The Telecommunications Center (TCC) at Robins and McClellan have the capability and port space to support the line, and there is no monthly charge if connected to the TCC. AUTODIN is projected to have 2780 protocol to communicate with the TI 990-4 minicomputer in July 1982, according to the AFLC telecommunications software manager. Scheduling implementation of the TI 990-4, or

## APPENDIX C

### KEY TECHNICAL ISSUES



OVERSEAS CONUS PURCHASES

(IN DAYS)

	<u>Current REX 2 O&amp;ST</u>	<sup>1</sup> <u>Current Overseas CONUS O&amp;ST</u>	<u>+/-</u>	<u>Estimated ALC REX 2 O&amp;ST</u>	<u>+/-</u>
Aviano <sup>2</sup>		138.8			
Rhein Main	153	94	-59	72	+22
Hellenikon	149	137	-12	63	+74
Ramstein <sup>2</sup>		118.3			
Hickam	77	84.6	+7.6	67	+17.6

<sup>1</sup> Data was extracted from sample overseas bases making CONUS purchases. The Contracting Administrative Lead Time (CALT) is not stratified by Priority Group on the CIAPS retrieval request. This is a composite figure including all Priority Groups.

<sup>2</sup> CONUS purchases were extracted at Aviano and Ramstein; however, REX 2 O&ST from the proposed overseas LP contracting centers was not collected or estimated.

PACIFIC THEATER

VENDOR - DIRECT - OVERSEAS

ESTIMATED AVERAGE O&ST (IN DAYS) - TRAVIS AFB LP CONTRACTING CENTER

	PG 1			PG 2			PG 3		
<u>To</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>
Clark	267	140	+127	266	121	+145			*
Hickam	265	141	+124	265	85	+180			
Osan	267	82	+185	266	89	+177			

ESTIMATED AVERAGE O&ST (IN DAYS) - McCLELLAN AFB LP CONTRACTING CENTER

	PG 1			PG 2			PG 3		
<u>To</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>
Clark	380	140	+240	264	121	+143	277	141	+136
Hickam	255	141	+114	254	85	+169	279	77	+202
Osan	261	82	+179	257	89	+168	278	145	+133

\* PG 3 O&ST was not collected or estimated from MAC aerial ports since it is not air eligible and would not substantially improve current O&ST.

# PACIFIC THEATER

## VENDOR - CONTRACTING CENTER - OVERSEAS

### ESTIMATED AVERAGE O&ST (IN DAYS) FROM TRAVIS AFB

	PG 1			PG 2			PG 3		
<u>To</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>
Clark	67	140	-73	66	121	-55			*
Hickam	65	141	-76	65	85	-20			
Osan	67	82	-15	66	89	-23			

### ESTIMATED AVERAGE O&ST (IN DAYS) FROM McCLELLAN AFB

	PG 1			PG 2			PG 3		
<u>To</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>
Clark	58	140	-82	52	121	-69	65	141	-76
Hickam	43	141	-98	42	85	-43	67	77	-10
Osan	49	82	-33	45	89	-44	66	145	-79

\* PG 3 O&ST was not collected or estimated from MAC aerial ports since it is not air eligible and would not substantially improve current O&ST.

EUROPEAN THEATER

VENDOR DIRECT

ESTIMATED AVERAGE O&ST (IN DAYS) DOVER AFB LP  
CONTRACTING CENTER

	PG 1			PG 2			PG 3		
<u>To</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>
Rhein Main	96	72	+24	97	99	-2			*
Incirlik	99	66	+33	100	110	-10			
Hellenikon	99	108	-9	99	92	+7			

ESTIMATED AVERAGE O&ST (IN DAYS) ROBINS AFB LP  
CONTRACTING CENTER

	PG 1			PG 2			PG 3		
<u>To</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>
Rhein Main	89	72	+17	99	99	0	110	153	-43
Incirlik	143	66	+77	99	110	-11	96	92	+41
Hellenikon	86	108	-22	128	92	+36	101	149	-48

\* PG 3 O&ST was not collected or estimated from MAC aerial ports since it is not air eligible and would not substantially improve current O&ST.

# EUROPEAN THEATER

## VENDOR - CONTRACTING CENTER - OVERSEAS

### ESTIMATED AVERAGE O&ST (IN DAYS) FROM DOVER AFB

<u>To</u>	PG 1			PG 2			PG 3		
	<u>Est.</u>	<u>Current</u>	<u>+/-</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>
Rhein Main	68	72	-4	69	99	-30	*		
Incirlik	71	66	+6	72	110	-38			
Hellenikon	71	108	-37	71	92	-21			

### ESTIMATED AVERAGE O&ST (IN DAYS) FROM ROBINS AFB

<u>To</u>	PG 1			PG 2			PG 3		
	<u>Est.</u>	<u>Current</u>	<u>+/-</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>	<u>Est.</u>	<u>Current</u>	<u>+/-</u>
Rhein Main	51	72	-21	61	99	-38	72	153	-81
Incirlik	52	66	-14	61	110	-49	58	92	-34
Hellenikon	48	108	-60	90	92	-2	63	149	-86

\* PG 3 O&ST was not collected or estimated from MAC aerial ports since it is not air eligible and would not substantially improve current O&ST.

APPENDIX B

ESTIMATED O&ST

FROM

POTENTIAL LP CONTRACTING

CENTER LOCATIONS

## CURRENT O&amp;ST

(IN DAYS)

SOURCE OF SUPPLY: GSA

	<u>Priority Group</u>	<u>Stocked for Overseas only</u>	<u>LP Not Stocked for Overseas</u>	<u>Average All Req'n O&amp;ST** (LP and Non LP)</u>	<u>UMMIPS</u>	<u>175% UMMIPS</u>
Rhein-Main	1	(*)	(*)		12	21
	2	(*)	245		16	28
	3	91	186	69	69	121
Incirlik	1	(*)	62		12	21
	2	80	261		16	28
	3	(*)	156	54	69	121
Hellenikon	1	(*)	99		12	21
	2	(*)	222		16	28
	3	(*)	205	74	69	121
Clark	1	(*)	347		13	23
	2	(*)	133		17	30
	3	128	193	68	84	147
Hickam(*)		(*)				
		(*)				
		49				
Osan	1	132	149		13	23
	2	80	186		17	30
	3	116	157	68	84	147

\* No GSA shipments were made to sample bases during data collection period.

\*\* This is a composite O&ST from all sources of supply to sample bases.

CURRENT O&ST

(IN DAYS)

SOURCE OF SUPPLY: AFLC

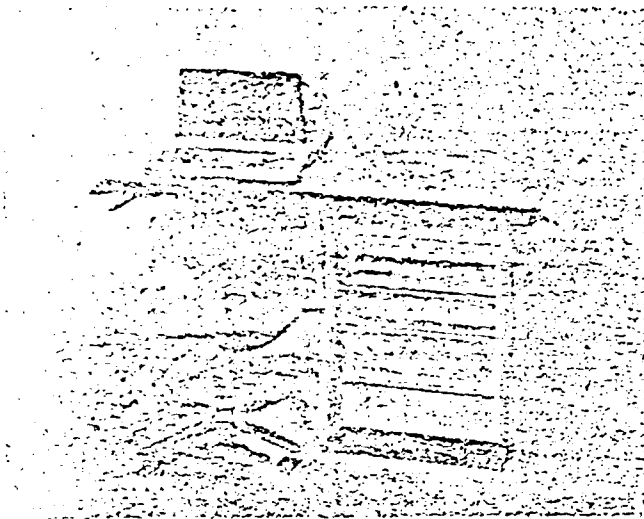
	<u>Priority Group</u>	<u>Current LP Not Stocked for Overseas</u>	<u>Average All Req'n O&amp;ST** (LP and Non LP)</u>	<u>UMMIPS</u>	<u>175% UMMIPS</u>
Rhein-Main	1	(*)		12	21
	2	112		16	28
	3	105	69	69	121
Incirlik	1	75		12	21
	2	241		16	28
	3	58	54	69	121
Hellenikon(*)					
Clark	1	152		13	23
	2	69		17	30
	3	136	68	84	147
Hickam(*)					
Osan	1	(*)		13	23
	2	88		17	30
	3	151	68	84	147

\* No AFLC shipments were made during data collection period.

\*\* This is a composite O&ST from all sources of supply to sample bases.



# Texas Instruments DS990 Model 4



The TI DS990 Model 4 shown above is a mid-range business system that can store a large database. This is a multi-terminal, multi-lingual system with upgrade capability through the addition of more memory, larger disk drives, or a high-speed cache memory subsystem.

## BACKGROUND INFORMATION

Texas Instruments, Inc., P.O. Box 225474, Dallas, TX 75205. Telephone (214) 995-2011.

Texas Instruments, Inc., was founded in 1930 under the name of Geophysical Service, Inc. They originally provided reflection seismograph service for use in oil and gas exploration. Because this was a new technology, GSI had to manufacture its own electronic equipment.

The company first sold electronic equipment during World War II, and then established a laboratory and manufacturing division. In 1952, they changed the name to Texas Instruments, and entered the semi-conductor business. After a series of developments and breakthroughs, they produced many new products, such as calculators, digital watches, data terminals, and minicomputers.

In 1971, Texas Instruments introduced the first computer-on-a-chip and entered the minicomputer and terminal business in earnest.

Headquartered in Dallas, Texas Instruments has more than 50 manufacturing plants in 19 countries. TI-CARE, their automated field service dispatching and management system, is their latest commitment to their customers, in backing up their nationwide service and information network.

## SYSTEM CHARACTERISTICS

The DS990 Model 4 Small Business System includes a

Current models: Model 4.

Memory: 128KB-2048KB RAM; 9.4MB disk (4.7MB removable).

Workstations: up to 8 recommended, local and/or remote.

Base list price: \$26,500, including processor, 128KB RAM, 9.4MB fixed/removable disk, video display terminal (VDT).

Typical list prices: \$34,205, includes all of the above, plus an 810 printer and three additional VDT's.

Primary users: accounting, education, government, insurance, legal, manufacturing, media, medical/health care, payroll/personnel, sales/distribution, transportation, word processing/text editing.

Popular options: from TI--printers, tape drive, additional disk storage.

Principal programming languages: COBOL, FORTRAN, BASIC, PASCAL.

Principal applications software: general ledger, payroll, accounts receivable/payable, invoicing, order entry, inventory control, sales analysis.

First shipment: 1979.

Number installed to date: information not available.

Current shipment rate: information not available.

Available through: company-owned sales offices, and OEM's in the U.S. and internationally.

990/10 computer with 128K bytes of error-correcting memory, a 911 video display terminal, one DS10 disk drive with 4.7 megabytes of fixed disk and 4.7 megabytes of removable disk pack storage. It comes as a completely packaged system.

The 990/10 minicomputer includes: on-board real-time clock; integer hardware multiply/divide; power fail/auto restart logic; 16 vectored interrupts; 16 extended operation; TILINE multi-user bus, command-driven CRU bus for up to 4096 input/output lines; interface for operator/programmer panel; 2K bytes of PROM program loader with/without mapping; memory error interrupt logic; and self-contained power supply for CPU and standard interface cards.

The DS990 Business Computer Systems are compatibly designed to expand easily. TI has architecturally designed their systems so that when upgrading, the same equipment housing and peripherals can be used, without additional costs. Software is also upward compatible, so that minimum time is spent in rewriting programs, or retraining operators. It takes 60-90 days after receipt of sales order for delivery.

Programmer productivity has been greatly enhanced in the DS990 systems through the availability of TI's DBMS-990, Query-990, and TIFORM 990. This systems software, designed and supported by TI, reduces programming time and error when building and maintaining databases and screen generated forms.

## Texas Instruments DS990 Model 4

### HARDWARE/PACKAGING

#### PROCESSOR/MEMORY

Model: 990/10, 16 bit  
RAM: 128KB-2048KB RAM; 330 nanosecond cycle time  
ROM: 2KB PROM  
System price: 128KB RAM and 2K PROM included in basic system price of \$26,500; 256KB base configuration is \$29,500

#### DISPLAY

Model: 911 VDT, included in system price  
Number: 8 local or remote; additional VDT's with systems upgrade  
Screen size: 12 inch  
Chars./screen: 1920 characters; 80 characters/line, 24 lines/screen  
Char. type: upper/lower case; 7 x 9 dot matrix  
Features: numeric pad, function pad, edit keys  
Interface: plug-in controller card

#### KEYBOARD

Type: tactile keys, QWERTY typewriter  
No. of keys: 55 total, 11 numeric, 12 edit, and 10 programmable function keys  
Interface: via display

#### DIRECT ACCESS STORAGE

Model: DS10 (\$9,900)  
Type: 14" cartridge disk, (fixed/removable)  
Capacity/disk: 9.4MB  
Drives/systems: 2/controller; 4 controllers/system  
Avg. access time: 35 milliseconds  
Transfer rate: 312.5KB/s  
Interface: controller is one-slot on TILINE bus

#### PRINTER

Model:	310	2230	2260
Type:	dot matrix serial	drum line	drum line
Paper:	fanfold 9"-15"	fanfold 9"-15"	fanfold 9"-15"
Char. set:	96 characters ASCII	96 characters ASCII	96 characters ASCII
Chars./line:	132	132	132
Speed:	180 cps	300 lpm	600 lpm
Interface:	RS-232	parallel	parallel
Price:	\$2,655	\$13,500	\$18,250

#### DATA COMMUNICATIONS

Model: communications module  
Trans. mode: full-duplex  
Protocol: synchronous, asynchronous  
Lines: lines not to exceed bandwidth  
Speed: 75, 110, 150, 200, 300, 1200, 2400, 4800, 9600 bps  
Interface: half-slot in CRU bus

#### OTHER I/O

Magnetic tape: Model 979A; 9 track 800 bpi or 1600 bpi models  
Additional disk drives: DS25, 22.3MB; DS50, 44.6MB; DS200, 169.5MB; DS1000, 12MB DSDD disks  
Remote Terminal Controller: intelligent controller with CPU & 64KB memory; supports multiple 911 VDT's & printers at a remote site  
915 Remote Terminal: for single-remote terminal needs at one site

#### I/O ELECTRONICS

Structure: 990/10 uses a two bus system; namely, TILINE—a high-speed I/O data transfer system that approaches instruction

execution rate; a command-driven communication-register-unit CRU, transfers data for low-to-medium speed I/O

### SOFTWARE

#### LANGUAGES

BASIC: yes, ANSI 3.6-1978 (\$2,450)  
COBOL: yes, ANSI 3.23-1974 (\$3,200)  
RPG: yes, IBM S/3 RPG II (\$2,200)  
Assembler: included with DX10 operating system  
Others: FORTRAN (\$2,500); FORTRAN '78 (\$3,000); TPL (\$2,000); PASCAL (\$1,950); a one-time as shown is paid for software

#### OPERATING SYSTEM

Name: DX10 (\$3,500)  
System requirements: 128KB RAM, hard disk, PROM loader, 911 VDT  
Concurrent tasks: unlimited number of tasks via rolling with disk  
Other functions: text editing, peripheral control, file management, memory management, task scheduling

#### UTILITIES

Sort: sort/merge (\$2,500)  
Text editor: included with operating system  
Others: unit diagnostic (\$1,275); TIFORM screen management (\$1,550); TIPE 990 word processing (\$3,500)

#### DATABASE MANAGEMENT SYSTEMS

Name: DBMS 990 (\$2,300); QUERY 990 (\$1,500)  
System requirements: 192K bytes of main memory  
Functions: general purpose DBMS and interactive QUERY designed specifically for minicomputer applications

#### COMMUNICATIONS SUPPORT

Name: 3750/2750 (\$1,150); 3270 ICS (\$1,450) plus cost of installation  
System requirements: IBM host; TI communications interface module  
Functions: file transfer and interactive communications compatible with IBM

#### APPLICATIONS PROGRAMS

none offered directly by Texas Instruments, software packages provided by OEM's or end-users

### SUPPORT SERVICES

#### DOCUMENTATION

Range: manuals available for all hardware and software features, \$5 to \$80 each; average price, \$10 each

#### SUPPORT

Training & education: training courses separately priced; prices for special courses conducted at customer sites quoted upon request  
Maintenance: hardware and software maintenance contract available from vendor  
Other: software hotline; TICARE computerized service network; OEM software exchange program; TIMIX users' group

#### TERMS AND CONDITIONS

Lease terms: software lease rates available from vendor  
Discounts: OEM discounts up to 33%; 33% discount on quantities of 25-29 units; no discounts on software (one-time charge)  
Warranties: software available "as is"; check with vendor for hardware warranty information  
Software terms: software in license form; software support renewable each year

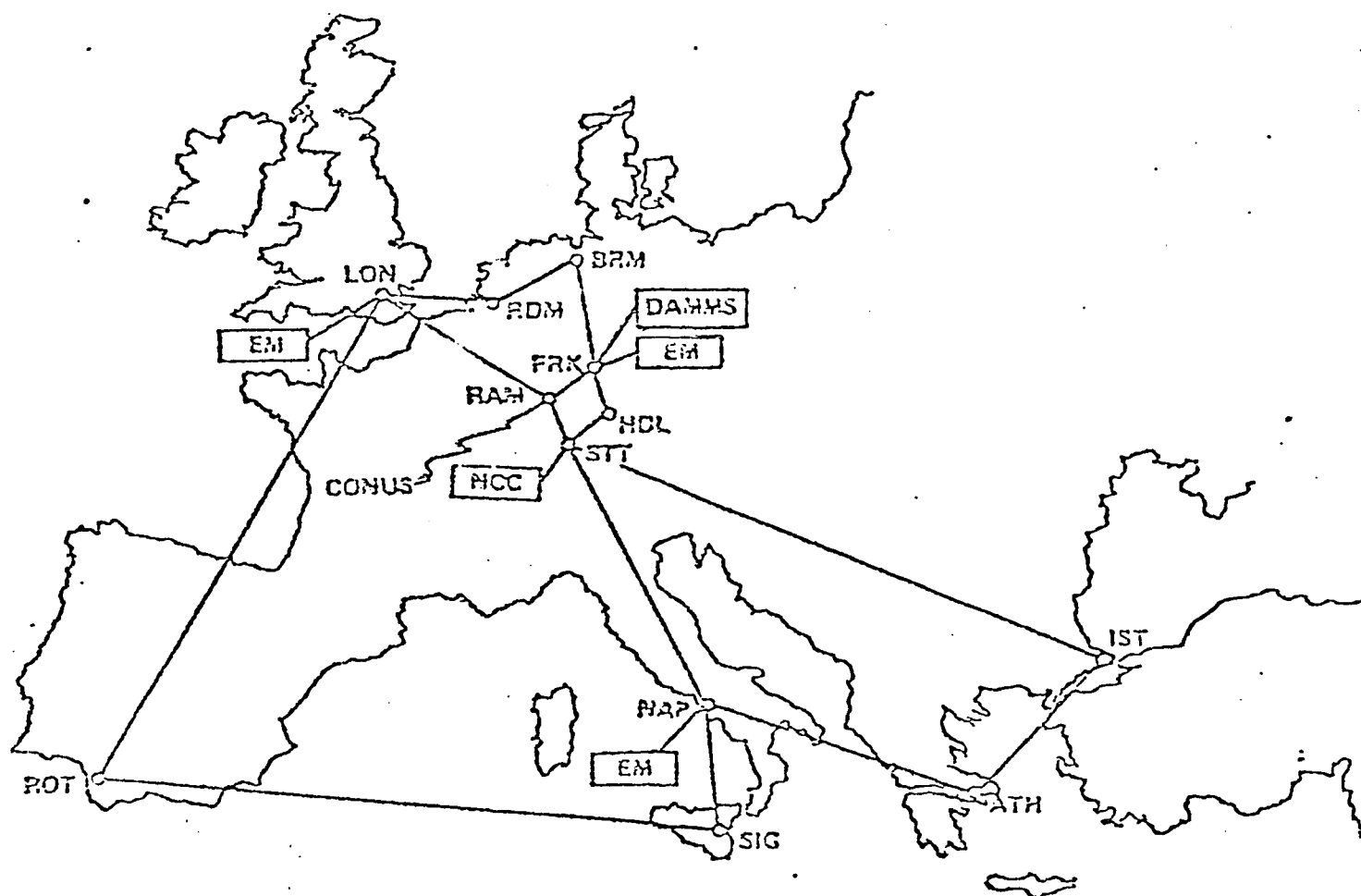
Estimated TI 990 Hardware  
Requirement

512 K byte Processor  
96 K byte Disc Drive  
4 CRT Terminals  
4 Printronix P-300 Printers  
2 Modems  
1 - Match  
\*2 - Match 2780

Protocol

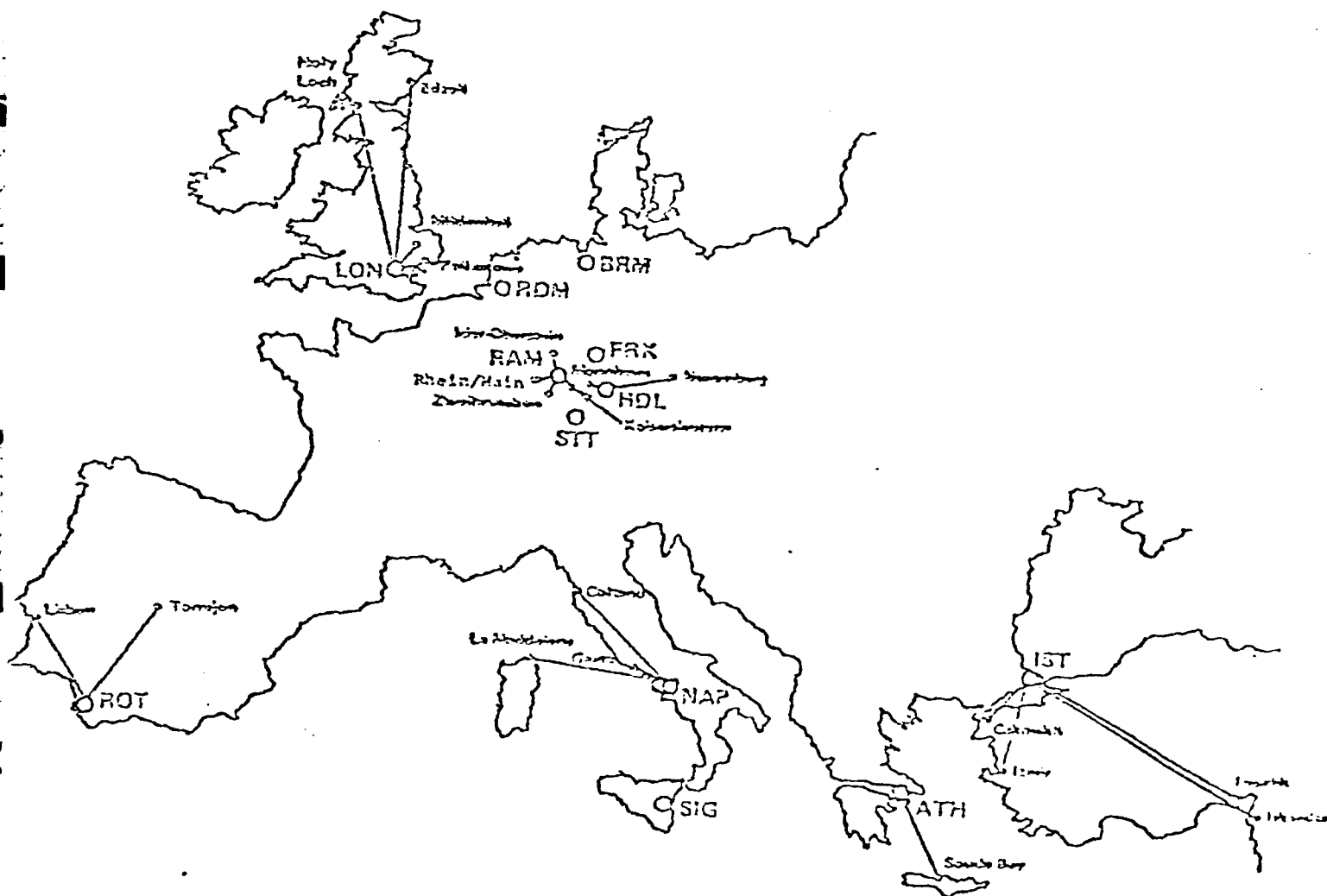
Approximate Cost: \$50-60,000

\* AUTODIN will be capable of interfacing with the 2780 protocol in July 1982, according to the AFLC Software Manager for Communications Systems, Mr. Norman, OC-ALC, Autovon 735-2148.



- DAMMS Department of the Army Movement Management System Host
- EM Electronic Mail Host
- NCC Network Control Center

MINET Communications Subsystem  
Backbone Configuration



MINET Communications Subsystem  
Terminal Access Configuration

APPENDIX D

ECONOMIC ANALYSIS

1.

LP COST TO ORDER  
COST COMPARISON

# ADMINISTRATIVE COST TO PROCESS A REQUISITION

## CURRENT

SOS	EST. REQUISITIONS/MO	COST TO ORDER	EST. \$ COST	
DLA <sup>1</sup> : 6500				
DCSC	1820	\$ 67.00	\$ 121,940	Source: 1DLA Defense Stock
DESC	910	54.00	49,140	Fund Manager
DGSC	2470	49.00	121,030	3 Apr 79 DLA Cost
DISC	650	116.00	75,400	to Order
DPSC	650	286.00	185,900	
GSA <sup>2</sup> : 3100				
>\$500.00	124	42.51	5,271	Source: 2Chief, Supply
<\$500.00	2976	17.00	50,592	Determination Co, GSA-FSS Washington, DC
AFLC <sup>3</sup>	400	25.24	10,096	Source: 3WR-ALC/MMM Msg 041359Z Sep 80 (DAS DOD Retail Cost to Order Plus Wholesale Interface Cost)
CURRENT ADMINISTRATIVE COST:			\$ 619,369	

## PROPOSED

AFLC	10,000	25.24	- 252,400	
PROPOSED ADMINISTRATIVE COST SAVINGS:			\$ 366,969/Mo	
PROPOSED ANNUAL ADMINISTRATIVE COST SAVINGS			\$4,403,628/Yr	



2.

MANPOWER COSTS

VENDOR-ALC-REQUISITIONER SHIPMENT MANPOWER ESTIMATE

SM-ALC	Estimated Current Personnel Equivalents (PEs)	Estimated Average Grade	Estimated Annual Pay	Estimated Annual \$ Cost	Estimated Proposed PEs	Estimated Average Grade	Estimated Annual Pay	Estimated Annual \$ Cost
Administrative	.3	GS-3	\$10,917	\$ 3,275	3	GS-3	\$10,917	\$ 3,275
Acct & Fin	1.5	7	16,984	25,476	15	7	16,984	254,760
Distribution	2.5	9	20,775	51,937.50	53	9	20,775	1,101,075
Contracting	3.3	9	20,775	68,557.50	33	9	20,775	685,575
Base								
Operating	1.4	3	10,917	15,284	19	3	10,917	207,423
Support (18%)								
Subtotal	9			164,530	123			2,252,108
WR-ALC								
Administrative	.3	GS-3	10,917	3,275	3	GS-3	10,917	3,275
Acct & Fin	3.1	7	16,984	52,650	31	7	16,984	526,504
Distribution	8.5	9	20,775	176,587.50	169	9	20,775	3,510,975
Contracting	8.4	9	20,775	174,510	84	9	20,775	1,745,100
Base								
Operating	3.7	3	10,917	40,393	52	3	10,917	567,684
Support (18%)								
Subtotal	24			447,415.50	339			6,353,538
Grand Total	33			611,945.50	462			8,605,646

Note 1: Step 3, 1981 Pay Scale

MANPOWER COST SUMMARY

VENDOR-DIRECT

VENDOR-ALC-REQUISITIONER

Proposed Annual \$ Cost: \$8.605M

Current Annual \$ Cost: \$ .612M

Additional Air Force Cost: \$7,993M

3.

TRANSPORTATION COSTS

A surcharge is added to the cost of the item by both DLA and GSA for transportation cost.

No additional cost will be incurred by the Air Force.

When lateral support becomes a reality in the overseas areas due to the proposed Movement Information Network (MINET), a transportation savings will occur, as shown by data resident in AFLMC files.

4.

FACILITIES COST

# Indefinite Delivery Open-End Contract Lead Time

## European Theater

From	To	*CALT	Est. Avg. Transit Time			PG I	Est. Avg. O&ST		PG III	UMMIPS	Est. Avg REX 2 O&ST Other Than Ind. Del Open End	+/-
			PG I	PG II	PG III		UMMIPS	PG II				
Robins AFB	Rhein Main	26	12	22	30	37	12	48	16	55	69	72
	Aviano	26	35	30	39	61	12	56	16	64	69	-
	Incirlik	26	13	22	16	39	12	47	16	42	69	58
	Hellenikon	26	9	51	21	35	12	77	16	47	69	63
Dover AFB	Rhein Main	16	5	4		21	12	20	16			
	Aviano	16	7	7		22	12	23	16			
	Incirlik	16	6	7		21	12	22	16			
	Hellenikon	16	6	6		22	12	22	16			

\* Contracting Administrative Lead Time is not stratified by Priority Group on the CIAPS retrieval request. This is a composite figure including all Priority Groups.

NOTE: PG III Estimated Average O&ST falls within UMMIPS standards currently. An improvement of 16-17 days over purchases negotiated with other types of contracts is shown. Benefits from this concept will depend largely on contract incentives to meet delivery schedules, improved transportation and communications support.

	Est. Yrly Vol. REX 2 <u>Construction</u>	Est. Yrly. Vol. REX 2 <u>Electronics</u>
	(LI)	(LI)
WR-ALC	3,000	4,800
SM-ALC	3,400	1,000

Use of indefinite delivery-open end contracts could reduce O&ST to Europe 16 to 17 days and reduce O&ST to the Pacific 26 days, as shown on the following charts.



1. An indefinite delivery open end contract negotiated with a vendor to provide delivery to the overseas base through the Contractor Operated Parts Depot (COPAD) provides improved responsiveness, according to COPAD statistics. This type contract applies to items having sufficient demand histories for stockage. Federal Supply Schedule (AAC I) REX 2 appliances and/or drapery and upholstery material are possible applications in addition to the electronics/construction items evaluated in this report. Requisitions flowing through the LP center directly to the vendor under an indefinite delivery-open end contract with an information copy to the LP center offers potentially improved leadtime. To make this concept operational at the proposed LP contracting centers, technical specifications for hardware and/or software for interface with contractor hardware must be included in the contract. An alternative is contractor use of Government furnished terminals, which would allow the terminals to be moved whenever there is a change in the contract operation. We found that COPAD procedures reduced average O&ST from 64 days to 21.5 days, a reduction of 42.5 days, or 66 percent.

2. An indefinite delivery-open end contract at ALC CCPs with a vendor-ALC-requisitioning activity shipping concept would reduce O&ST by 68 percent for Hellenikon, 54 percent for Incirlik, and 63 percent for Rhein Main, 72 percent for Clark, 47 percent for Hickam, and 72 percent for Osan.

3. The potential requisition volume for such indefinite delivery-open end contracts is less than the 28,000 Line Item (LI) per year COPAD activity as shown below.

APPENDIX E

ESTIMATED

INDEFINITE DELIVERY-

OPEN END CONTRACT

LEAD TIME

Maximum
HC \$ Savings x Nr. Overseas Bases
AF-Wide LP HC \$ Value

\$21,987.06 x 30

=  $\frac{\$659,611.80}{\$10,350,036}$

= 6.4% Maximum Estimated Recurring AF-Wide Reduction in Inventory Investment

$$\left[ \frac{\text{HC \$ Savings}}{\text{No. Sample Bases with Recurring Savings}} \times \text{Nr. Overseas Bases} = \text{Estimated AF-Wide Savings} \right]$$

$$\frac{\$37,610.37}{4} \times 30$$

$$= \$282,077.77$$

$$= \$.282\text{M Estimated Recurring AF-Wide Savings}$$

2. To determine the supply performance impact, the percentage of recurring holding cost savings to the AF-wide holding cost for LP on-hand inventory is developed using savings computed for sample bases in this study and 26% (current retail holding cost rate) of FY 81 AF-wide LP stock on hand from Table III of the M-20 report. The Air Force-wide LP holding cost \$ value is developed:

FY-81 AF-Wide LP Stock-on-Hand	X	Holding Cost Rate	=	AF-Wide LP Holding Cost \$ Value
39,807,832		.26		\$10,350,036

$$\frac{\left[ \frac{\text{HC Savings}}{4} \right] \times \text{Nr. Overseas Bases}}{\text{AF-Wide LP HC Value}}$$

$$= \frac{\$282,077.77}{\$10,350,036}$$

$$= 2.7\% \text{ Average Estimated Recurring AF-Wide Reduction in Inventory Investment}$$

The maximum and minimum reductions possible are:

$$\frac{\left[ \frac{\text{Minimum HC \$ Savings}}{4} \right] \times \text{Nr. Overseas Bases}}{\text{AF-Wide LP HC \$ Value}}$$

$$= \frac{\$1683.38 \times 30}{\$10,350,036}$$

$$= \frac{\$50,501.4}{\$10,350,036}$$

$$= .5\% \text{ Minimum Estimated Recurring AF-Wide Reduction in Inventory Investment}$$

1. The estimated recurring holding cost savings are:

$$\frac{\text{Items w/Demand} \geq 5}{x} \left( \text{Unit Price (Item)} \times .26 \left( \frac{\text{Old SLQ (Item)}}{\text{New SLQ (Item)}} \right) - \right) = \text{HCS}$$

Where:

Unit Price = REX 2 Item Record Extract

.26 = 26% Holding Cost Rate

OLD SLQ =  $1 \sqrt{3 \times \text{Old O\&STQ}}$

OLD O&STQ = DDR x O&ST before reduction of O&ST

DDR =  $\frac{\text{Cum Recurring Demands}}{\text{Max ((Date of REX 2 Extract - Date of First Demand), 180)}}$

NEW SLQ =  $1 \sqrt{3 \times \text{New O\&STQ}}$

NEW O&STQ = DDR x O&ST after reduction of O&ST

HCS = Holding cost savings.

NOTE: Holding cost savings are based on SLQ, since inventory on-hand is subject to the Holding Cost, while inventory on order, or during O&ST, is intransit. EOQ is not included since it does not change. Using this approach, recurring savings resulting from reduced holding cost for sample bases are:

Rhein Main	\$ 3,809.64
Hellenikon	1,683.38
Incirlik	10,130.29
Osan	<u>21,987.06</u>
	\$37,610.37

7.

RECURRING HOLDING COST  
SAVINGS

$$\frac{\text{ROL \$ Savings}}{\text{No. Sample Bases with One-Time Savings}} \times \text{Nr. Overseas Bases} = \text{Estimated AF-Wide Savings}$$

$$\frac{879,943.15}{4} \times 30$$

$$= \$6,599,573.40$$

$$= \$6.6\text{M Estimated One-Time AF-Wide Savings}$$

2. To determine supply performance impact, the ratio of savings for sample bases developed using the approach above to FY 81 Air Force-wide LP O&STQ and SLQ from Table III of the "Consolidated Stratification and Transaction" M-20 report is developed:

$$\frac{\text{ROL \$ Savings}}{\text{No. Sample Bases with One-Time Savings}} \times \text{Nr. Overseas Bases}$$

$$\frac{\text{AF-Wide LP O\&STQ + SLQ}}{\text{AF-Wide LP O\&STQ + SLQ}}$$

$$= \frac{\$6.6\text{M}}{\$34.8\text{M}}$$

$$= 19\% \text{ Average Estimated One Time Air Force-Wide Reduction}$$

The maximum and minimum reductions possible are:

$$\frac{(\text{Minimum ROL \$ Savings}) \times \text{Nr. Overseas Bases}}{\text{AF-Wide LP O\&STQ + SLQ}}$$

$$\$24,105.61 \times 30$$

$$= \$723,168.30$$

$$= \frac{\$.723\text{M}}{\$34.8\text{M}}$$

$$= 2\% \text{ Minimum Estimated One Time Air Force-Wide Reduction}$$

$$\frac{(\text{Maximum ROL \$ Savings}) \times \text{Nr. Overseas Bases}}{\text{AF-Wide LP O\&STQ + SLQ}}$$

$$= \$588,895.39 \times 30$$

$$= \$17,666,861$$

$$= \frac{\$17.7\text{M}}{\$34.8\text{M}}$$

$$= 51\% \text{ Maximum Estimated One Time Air Force-Wide Reduction}$$

1. The estimated one-time savings in Reorder Level (ROL), or O&STQ plus SLQ, are developed:

$$\begin{array}{l} \text{Items} \\ \text{w/Demand} \\ \geq 5 \end{array} \quad \left( [\text{Unit Price (Item) Old ROL (Item)} - \text{New ROL (Item)}] \right) = \text{ROLS}$$

Where:

Unit Price = REX 2 Item Record Extract

OLD ROL = Old O&STQ + Old SLQ

OLD O&STQ = DDR x O&ST before reduction of O&ST

DDR =  $\frac{\text{Cum Recurring Demands}}{\text{Max ((Date of REX 2 Extract - Date of First Demand), 180)}}$

OLD SLQ =  $1\sqrt{3 \times \text{Old O\&STQ}}$

NEW ROL = New O&STQ + New SLQ

NEW O&STQ = DDR x O&ST after reduction of O&ST

NEW SLQ =  $1\sqrt{3 \times \text{New O\&STQ}}$

ROLS = Reorder Level Savings

Using this approach, one-time savings resulting from reduced O&STQ and SLQ for sample bases are:

Rhein Main	\$ 73,490.90
Hellenikon	24,105.61
Incirlik	193,451.25
Osan	<u>588,895.39</u>
	\$ 879,943.15



6.

ONE-TIME O&STQ/SLQ (ROL)

INVENTORY REDUCTION

SAVINGS

ESTIMATED TI 990

Hardware Cost

- 512 K byte Processor
- 96 K byte Disc Drive
- 4 CRT Terminals
- 4 Printronix P-300 Printers
- 2 Modems
  
- 1. Match
- 2. Match 2780 Protocol

Approximate Cost: \$50 - 60,000./System

\_\_\_\_\_ 2 LP Contracting Centers

\$120,000. Total Cost

Upgraded AUTODIN is available at no additional cost.

When MINET becomes operational, it will be available at no cost to military common users.

5.

HARDWARE COST

FACILITIES COST ESTIMATE

SM-ALC

	<u>Cost</u>
Vendor Direct Concept	\$38,730.
Vendor-ALC-Requisitioner Concept	\$44,230.

WR-ALC

Vendor-Direct	130,000.
Vendor-ALC-Requisitioner	<u>130,000.</u>
Total Vendor Direct:	168,730.
Total Vendor-ALC-Requisitioner:	294,230.

# Indefinite Delivery Open-End Contract Lead Time

## Pacific Theater

From	To	*CALT	Est. Avg. Transit Time			Est. Avg. O&ST			UNMIPS	Ind. Del Open End	+/-
			PG I	PG II	PG III	PG I	PG II	PG III			
McClellan AFB	Clark	11	24	18	28	35	13	29	17	39	65
	Hickam	11	9	8	30	20	13	19	17	41	67
	Kadena	11	7	20	36	18	13	31	17	47	-
	Osan	11	15	11	29	27	13	22	17	40	66
Travis AFB	Clark	13	5	4		17	13	17	17		
	Hickam	13	3	3		15	8	15	17		
	Kadena	13	5	5		18	13	17	17		
	Osan	13	5	4		17	13	17	17		

\* Contracting Administrative Lead Time is not stratified by Priority Group on the CIAPS retriaval request. This is a composite figure including all Priority Groups.

NOTE: Travis O&ST for PG II except for Hickam AFB falls within UNMIPS Stds, and McClellan O&ST for PG III falls within UNMIPS Stds. An improvement of 26 days over purchases negotiated with other types of contracts is shown. Contract incentives to meet delivery schedules, improved transportation and communications are essential to this concept.

**END**

**FILMED**

**5-85**

**DTIC**